



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

April 30, 2013

Via Email

Mr. Constantine E. Karayannopoulos
President and Chief Executive Officer
Molycorp, Inc.
5619 Denver Tech Center Parkway, Suite 1000
Greenwood Village, Colorado 80111

Re: Molycorp, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2012
Filed March 18, 2012
File No. 001-34827

Dear Mr. Karayannopoulos:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Form 10-K for the Fiscal Year Ended December 31, 2012

Management's Discussion and Analysis, page 56

1. We note management's discussion and analysis of results of operations. When you list multiple factors that contributed to a material change in a financial statement line item between periods, please quantify, where possible, the extent to which each change contributed to the overall change in that line item. Please provide proposed disclosures to be included in future filings.
2. We note you have experienced significant reduction in revenues and product volume related to your Resources segment for the year ended December 31, 2012. We also note these decreases to lower average sales prices and volume reductions "primarily

attributable to limited Bastnasite feedstock due to the new mill coming online at the same time the last of the historical stockpiles were drawn down.” Please address the following points:

- clarify when your new mill at the Mountain Pass facility came online and when your historical stockpiles became exhausted;
 - quantify sales attributed to your historical stockpiles in 2012, and amounts attributable to new production, and
 - clarify the reasons for the production delays and discuss known material trends and uncertainties.
3. We note that you recorded \$80.9 million of write-downs of inventory of which \$46.8 million was attributed to Resources segment for the year ended December 31, 2012. Given the magnitude of this charge in relation to total prior year write-downs of \$2.8 million and \$2.5 million for the year ended December 31, 2011 and 2010 respectively, please expand your disclosure to discuss the events and circumstances that led to this charge.

Mineral Properties and Development costs, page 68

4. We note that you deplete mineral properties using the units of production method over estimated proven and probable reserves. We also note the significant downward revision of your reserves as of January 2012. Tell us the extent to which reserves are currently accessible and the extent to which additional capital improvements are required to convert and gain access to reserves. Please provide greater insight in the critical assumptions used in developing reserves estimates and future development costs.

Financial Statements

2. Summary of Significant Accounting Policies, page 79

Mineral Deposits and Development Costs, page 80

5. We note your disclosure indicating that you began depleting your mineral properties and development costs in 2012 using the units of production method. We also note that you generated a significant amount of revenues from your Mountain Pass facility during the year ended December 31, 2011. Please clarify when and the criteria used to determine you exited the development stage and entered the production stage as defined in Industry Guide 7. Please discuss the date of the reserve report used to calculate depletion.

Recoverability of Long Lived Assets, page 81

6. We note your disclosure that “there were no other events or changes in circumstances indicating that the carrying amount of the Company’s other long-lived amortizable assets as of December 31, 2012 may not be recoverable.” However, we also note that you faced significant negative trends in fiscal 2012, including declining demand and falling prices of REEs and over supply of certain REEs that you produce. We further note the significant reduction in your sales and production in your Resources segment, operating losses across all segments in 2012, and negative cash flows from operations in fiscal 2012. Please tell us how you considered these events and circumstances as potential indicators of impairment of your other long lived assets, explaining the basis for your conclusions and your consideration of the factors listed above.
7. We note your disclosure on page 90 that you concluded that the Resources segment had fair value below carrying value. If you tested long-lived assets for impairment, please provide us with the following information on how you tested the long-lived assets for recoverability:
 - Clarify what you consider an asset group
 - Clarify how many asset groups were tested for impairment
 - Clarify how many asset groups were considered at risk of impairment (i.e. the asset group has a FV that is not substantially in excess of its CV)

For any at risk asset group, provide us with (i) the percentage by which FV exceeded CV as of the date of the most recent test, (ii) a description of the methods and key assumptions used and how the key assumptions were determined, (iii) a discussion of the degree of uncertainty associated with the key assumptions and (iv) a description of potential events and/or changes in circumstances that could reasonably be expected to negatively affect the key assumptions. Please add clarifying disclosures in management’s discussion and analysis.

Engineering Comments

Results, page 41

8. We note your disclosure of proven and/or probable reserves prepared by your company and SRK as of January 2012. Please forward to our engineer as supplemental information and not as part of your filing, your information that establishes the legal, technical, and economic feasibility of your materials designated as reserves, as required by Section C of Industry Guide 7 pursuant to Rule 12b-4 of the Exchange Act. The information requested includes, but is not limited to:

- Property and geologic maps
- Description of your sampling and assaying procedures
- Drill-hole maps showing drill intercepts
- Representative geologic cross-sections and drill logs
- Description and examples of your cut-off calculation procedures
- Cutoff grades used for each category of your reserves and resources
- Justifications for the drill hole spacing used to classify and segregate proven and probable reserves
- A detailed description of your procedures for estimating reserves
- Copies of any pertinent engineering or geological reports, and executive summaries of feasibility studies or mine plans which including the cash flow analyses
- A detailed permitting and government approval schedule for the project, particularly identifying the primary environmental or construction approval(s) and your current location on that schedule.

To minimize the transfer of paper, please provide the requested information on a CD, formatted as Adobe PDF files and provide the name and phone number for a technical person our engineer may call, if he has technical questions about your reserves.

In the event your company desires the return of this supplemental material, please make a written request with the letter of transmittal and include a pre-paid, pre-addressed shipping label to facilitate the return of the supplemental information. Please note that you may request the return of this information pursuant to the provisions of Rule 12b-4 of the Exchange Act.

If there are any questions concerning the above request, please phone Mr. George K. Schuler, Mining Engineer at (202) 551-3718.

9. We note your reserves are stated as of your fiscal year end 2011 or January of 2012. Please modify your filing and update your reserves to coincide with your fiscal year end. You may deduct your annual production from these reserves, if that is appropriate. Please disclose your stockpile removals along with estimated grades and the sales volumes of major product lines.

Resources, page 56

10. We note you report product sales volume and aggregate production for 2012 and 2011. Please modify your filing and disclose your annual production as required by Regulation S-K, Instructions to Item 102, Part 3 providing detailed information regarding your mined tonnage and grade, your stockpile additions/subtractions with estimated grades, mill metallurgical recovery, concentrate production & grade, and internal/external production volumes.
11. We note your discussion of limited bastnasite feedstock due to the new mill coming online. Please provide a discussion in your modified filing explaining the phased transition from your former state of operations at the old facility, completion of construction at the new mill, commissioning and startup for your new concentrator. Please address major cost and schedule variances from previous estimates. In the event the old facilities are decommissioned and/or dismantled, please include a discussion of this process.
12. Please modify your filing and provide a brief discussion of your product feed sources, quantity, and feedstock quality for your Chemicals and Oxides, Magnetic Materials and Alloys, and Rare Metals segments. Please disclose the sources and amounts of your metal feed stocks for gallium, indium, rhenium, niobium, and tantalum. Please comment on the relative source supply, delivery reliability, and price volatility of your feedstock materials.

Closing Comments

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Mr. Constantine E. Karayannopoulos
Molycorp, Inc.
April 30, 2013
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You may contact Craig Arakawa at (202) 551-3650, or Nasreen Mohammed at (202) 551-3773 if you have questions regarding comments on the financial statements and related matters. You may contact George K. Schuler, Mining Engineer, at (202) 551-3718 with questions about engineering comments.

Sincerely,

Melissa N. Rocha for

Tia L. Jenkins
Senior Assistant Chief Accountant
Office of Beverages, Apparel and
Mining